

Letters

Pediatricians underestimate parent receptiveness to early peanut introduction



Peanut allergy prevalence has increased.¹ The Learning Early About Peanut (LEAP) study found that early peanut introduction to high-risk infants reduced the risk of peanut allergy.² In response, the National Institute of Allergy and Infectious Diseases (NIAID) convened an Expert Panel that published guidelines for early peanut introduction.³ Potential barriers to guideline implementation exist. The recommendations are quite different from those espoused 20 years ago.⁴ Furthermore, peanut is not a common weaning food, and the medicalization of peanut introduction could be problematic. Although instructions for home preparation are provided (ie, Togias et al³ describe target peanut doses for high-risk infants and infant-safe forms of peanut and guidance for home or office introduction), barriers such as feasibility, screening recommendations, and allergist access have been identified.^{5–7}

We evaluated the awareness, implementation, and suggestions to overcome barriers, regarding the guidelines in a descriptive study. Printed surveys were administered to a convenience sample of nonallergist physicians ($n = 50$) and to parents ($n = 100$) of infants age younger than 1 year in multiple practice settings in the Upper East and West Sides of New York from June 4 to July 16, 2018. Anonymous surveys included a description of the guidelines. The physician and parent surveys had similar content (see online repository). The study was approved by the institutional review board at Mount Sinai.

The physician sample included pediatricians (90%) and pediatric specialists (10%). Practice settings were academic faculty (66%), private practice (22%), and hospital-based practice (12%). Physicians' years in practice were: in residency (28%), and 0 to 10 years (30%), 10 to 20 years (24%), 20 to 30 years (14%), more than 30 years (4%) post-residency.

Most physicians (84%) were guideline-aware; the common sources of awareness were colleagues (44%), the American Academy of Pediatrics newsletter (40%), and reading the guidelines (28%). Physicians' mean comfort with following the guidelines was 4.1 (5-point Likert scale, 5 = very comfortable to 1 = very uncomfortable). Recommended age of introduction before the Guidelines were reported most frequently as 1 to 3 years (40%), between 6 months to 1 year (24%), and approximately 6 months (16%). Among guideline-aware physicians, 60% followed them "as

written," and the remainder modified their approach. Among those who modified, 29% reported less testing and referrals, and 23% reported more, 18% recommend later introduction, 18% use different risk classification, and 12% factor family preference into recommendations. The greatest physician-perceived implementation barriers were parental acceptance (60%), fear of giving peanut early (46%), and access to allergists (24%). Physicians identified patient handouts (78%) and access to infant-safe forms of peanut (52%) as needed resources.

In the parent sample (participants were not specifically linked to the physician sample), infant age was 38% 0 to 4 months, 16% 4 to 6 months, 21% 6 to 9 months, and 25% 9 to 12 months. Eczema severity was determined by parental self-report on the survey, using features described in the Guideline, with results as follows: 74% none, 19% mild, 5% moderate, 2% severe.

Overall, 58% of parents were guideline-aware. The common sources of knowledge were pediatricians (30%), internet (19%) and friends (14%). Interestingly, 90% indicated comfort with early introduction when answering yes/no. Among parents with infants older than 6 months ($n = 46$), peanut-feeding rate was 37%; among guideline-aware parents in this age group ($n = 32$), feeding rate was 53%. All parents who had given peanut were aware of the guidelines ($n = 17$). In the 9- to 12-month subgroup, the peanut feeding rate was 64%. The greatest parent-identified barriers were fear of reaction (36%), choking (11%), and lack of infant-safe forms (6%). Parents identified a need for more physician advice (44%), brochures (24%), and allergist access (18%).

Figure 1 shows physician and parent responses. Fears about the process were the primary barriers identified by both stakeholders; parents want physician advice and written materials, and the physicians also want written materials to give to the parents.

In summary, we found a high physician and parent comfort level with the guidelines, but evidence of low or modified implementation. Physician implementation is complicated by their assumption of parental reluctance, as well as access to allergists for referrals, access to infant-safe peanut, and time. The discrepant results with regard to physician-perceived barrier of parental acceptance (60%) and parent-reported comfort (90%) suggest that the physician's assumptions about parental acceptance may be incorrect. Parental fears about reactions and choking could be addressed by the pediatrician and with written materials.

Other studies have addressed guideline implementation. A nationally representative survey on support for the guidelines among expecting and new parents showed 71% awareness and only 31% willingness to introduce peanut before or around 6 months of age.⁸ In our study, parental awareness was lower (58%) and parental comfort was much higher (90%). This may reflect opinions in

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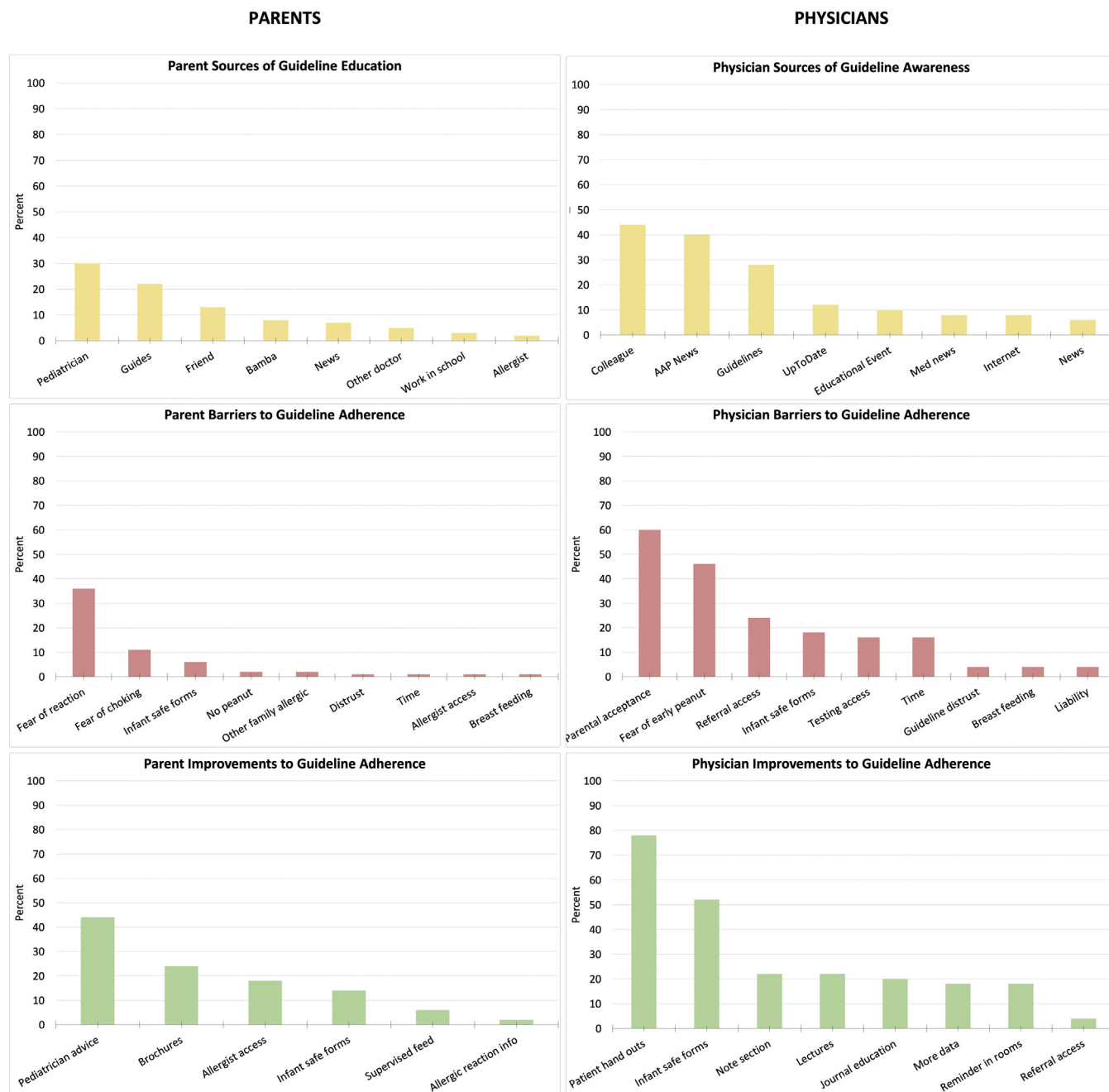


Figure 1. Physician- and parent-reported sources of awareness, barriers, and suggested improvements for implementing the guidelines. Subjects could select more than 1 response for each question.

different regional populations. Additionally, respondent answers to questions about comfort may not match their actions; for example, the high indication of comfort contrasts with the low rate of early introduction, indicating barriers or misunderstanding. In a Canadian survey, pediatricians recommended peanut introduction mostly between 6 months and 1 year (64%), although 7.1% were still advising to wait until after 1 year.⁹ Our study found similar results, with 50% of physicians following guidelines strictly and 6% recommending later introduction. Finally, a recent study found allergist referral can result in proper guideline implementation.¹⁰ As noted in our study, however, allergist access may be a barrier.

Our study has some limitations. Our sample size limited any subgroup analysis, and we did not recruit based on risk, reducing

replies from parents with infants at highest risk. Another limitation was sampling bias based on region and practice types.

In summary, this study shows gaps in awareness and implementation. The perceived high comfort of parents is encouraging, as is the identification of simple means to reduce barriers. The results suggest a need for education for both pediatricians and parents to ensure implementation, with an emphasis on distribution of more written educational material.

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Association of antieosinophil therapy with decreased body mass index in patients with severe asthma

A preliminary retrospective analysis



The type 2 high endotype of asthma with adult onset is often characterized by severe, persistent, steroid-refractory eosinophilic inflammation. Interleukin 5 (IL-5) is a pivotal cytokine for eosinophil survival. The amelioration of eosinophilic inflammation through anti-IL-5 therapies (mepolizumab, reslizumab, and benralizumab) reduces exacerbations and improves control and is well tolerated overall.

Eosinophils have recently been implicated in adipose tissue (AT) homeostasis. A threshold number of eosinophils appear critical for weight loss and glucose tolerance.¹ Wu et al² first reported the residence of eosinophils in AT with weight gain and insulin resistance in an eosinophil-deficient murine model, in contrast to hypereosinophilic mice that demonstrated weight loss and improved glucose tolerance. An accumulating body of evidence has since supported these findings and implicated eosinophils in browning of AT, which decreases weight while enhancing insulin sensitivity.³ Eosinophils induce polarization of AT macrophages into M2-like macrophages, which enhances catecholamine import into the local environment thereby improving glucose tolerance. Obese individuals have fewer eosinophils and type 2 cytokines in their AT.⁴

The literature suggests a critical mass of eosinophils is necessary for AT homeostasis, but increasing eosinophil levels alone does not appear sufficient to confer metabolic benefits.⁵ The effect of depleting eosinophils on individual weight is a potentially important area of AT biology. Although patients with asthma treated with anti-IL-5 therapies are theoretically an ideal population for evaluation, in reality multiple confounding factors may preclude this population from evaluation. These factors include concomitant use of steroids in patients with severe asthma as well as the underlying association of tissue eosinophilia with obesity in severe asthma. In a cohort of patients with severe asthma stratified by weight, those with a higher body mass index (BMI; calculated as weight in kilograms divided by square of height in meters) had higher sputum IL-5 and eosinophils in lung tissue but not in the lumen.⁶ The redistribution of eosinophils from AT to lungs has been postulated to determine disease severity.⁶

This retrospective analysis used a cohort of adults with asthma who were receiving anti-IL-5 therapies between January 2016 and September 2018 at a single institution. Inclusion criteria were adult-onset asthma with severe persistent disease and treatment with anti-IL-5 therapy for 6 consecutive months. The primary objective was to determine the long-term effect of antieosinophil agents in patients with severe asthma on BMI trajectories.

During the study period, 58 patients were prescribed anti-IL-5 agents. Of these patients, 51 (15 [29.4%] male; mean [SD] age, 56.7 [13.4] years) met the inclusion criteria and were included in the analysis. A total of 29 patients were prescribed mepolizumab, 16 reslizumab, and 6 benralizumab. All 3 groups were broadly similar without a significant difference in baseline BMI. The median age of asthma diagnosis was 38.5 years (range, 18–62 years). Peak documented blood eosinophil counts ranged from 110 to 1360/ μ L (mean, 550/ μ L). The large variance in eosinophils may be secondary to the fact that 19 patients were treated with maintenance oral corticosteroids (OCSs), with a median maximal daily prednisone dose of 20 mg (range, 5–80 mg). A total of 23 patients had a baseline BMI greater than 30 before anti-IL-5 therapy. Similar frequency of maintenance OCSs was found between obese and nonobese cohorts: 11 of 20 obese patients (55%) and 9 of 23 nonobese patients (39%) ($P = .30$).

Table 1 stratifies weight change by baseline BMI and anti-IL-5 agent. The mean BMI change during 6 months among the entire cohort showed a decrease by 1 point ($P = .03$) and was within 1 point of each other for all 3 agents used: -1.3 for mepolizumab, -1.1 for reslizumab, and 0.3 among benralizumab users. The largest apparent effect was among mepolizumab users; however, this group also accounted for the most patients. There was also significant variability in BMI fluctuations among the mepolizumab subgroup mepolizumab (range, -5.9 to 5.4 ; $P = .03$), which was not observed for the other 2 agents (-3.0 to 1.6 for reslizumab [$P = .34$] and -2.5 to 3.3 for benralizumab [$P = .71$]). Obese patients with a baseline BMI greater than 30 had a mean BMI decrease of 1.7 across all 3 agents, which was significant compared with the remainder of the cohort ($P = .04$). When analyzed within the obese category, the mean BMI change for each agent was not significantly different.

An unexpected role for eosinophils has been in AT homeostasis, potentially influencing whole-body metabolic fitness. Murine

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